Agriculture, Ecosystems and Environment, 32 (1990) 349–351
Elsevier Science Publishers B.V., Amsterdam

Contents of *Agriculture Ecosystems and Environment*, Volume 32

VOL. 32 NOS. 1–2 **SEPTEMBER 1990**

Modifying a water balance program (WATBAL) to test the effectiveness of reclamation measures on degraded rangeland by chisel ploughing and waterponding
G.S. Richmond, K.M. Wang and W.R. Stern (Nedlands, W.A., Australia) 1

Input/export relationships of major ions in west Wales catchments
W.A. Adams and G.M. Evans (Aberystwyth, Gt. Britain) 13

Respiration studies on the decomposition of organic waste-amended colliery spoil
N.F.Y. Tam and Y.S. Wong (Kowloon, Hong Kong) 25

Biological control of the cassava mealybug, *Phenacoccus manihoti* (Hom., Pseudococcidae) by *Epidinocarsis lopezi* (Hym., Encyritdae) in West Africa, as influenced by climate and soil
P. Neuenschwander, W.N.O. Hammond, O. Ajuonu, A. Gado, R. Allomasso and I. Okon (Cotonou, Benin), N. Echendu (Umuahia, Nigeria) and A.H. Bokonon-Ganta (Porto-Novo, Benin) 39

Direct and residual effects of short duration intercrops on the cassava whiteflies *Aleurotrachelus socialis* and *Trialeurodes variabilis* (Homoptera: Aleyrodidae) in Colombia
C.S. Gold, M.A. Altieri (Albany, CA, U.S.A.) and A.C. Bellotti (Cali, Colombia) 57

Effect of Trona (Urao) on the survuval and reproduction of *Sitophilus zeamais* and *Tribolium castaneum* on stored maize
L.C. Emebiri and M.I. Nwufo (Owerri, Nigeria) 69

Interactions between three weevil species in the biocontrol of *Sesbania punicea* (Fabaceae): the role of simulation models in evaluation
J.H. Hoffmann (Rondebosch, South Africa) 77

Influence of tree canopies on grassland productivity and nitrogen dynamics in deciduous oak savanna
L.E. Jackson, R.B. Strauss, M.K. Firestone and J.W. Bartolome (Berkeley, CA, U.S.A.) 89

Atriplex species as irrigated forage crops
M.C. Watson (Tucson, AZ, U.S.A.) 107

Impact of irrigated horticulture on nitrate concentrations in groundwater
H.B. Pionke (University Park, PA, U.S.A.), M.L. Sharma (Wembley, W.A., Australia) and K.-J. Hirschberg (Perth, W.A., Australia) 119

Natural enemies and host-plant asynchrony contributing to the failure of the introduced moth, *Coleophora parthenica* Meyrick (Lepidoptera: Coleophoridae), to control Russian thistle
H. Müller, G.S. Nuessly and R.D. Goeden (Riverside, CA, U.S.A.) 133

Nutrient cycling in the cacao ecosystem: rain and throughfall as nutrient sources for the

soil and the cacao tree
J. de O. Leite and R.R. Valle (Bahia, Brazil) 143
Book Reviews
Nitrogen efficiency in agricultural soils 155
Agricultural systems 157
Studies in environmental science 159
Environmental contamination and toxicology 161
Humic substances 163
Insect pheromones 167

Announcements 169

Guide for Authors 171

VOL. 32 NOS. 3–4 **OCTOBER 1990**

Agricultural development in the West African Sahelian region: a cure against land hunger?
H. van Keulen and H. Breman (Wageningen, The Netherlands) 177
Salt impaction at near-coastal locations and possible effects on grapevines in southwest of Western Australia
F.J. Hingston and J.H. Galbraith (Wembley, W.A., Australia) 199
Influence of topsoil removal and fertilizer application on peanut yields from an Indonesian Ultisol
S.F. Siebert (Missoula, MT, U.S.A.) and T.W. Scott (Ithaca, NY, U.S.A.) 213
Effect of wood ash application on soil pH and soil test nutrient levels
T. Ohno and M.S. Erich (Orono, ME, U.S.A.) 223
Annual net primary production and efficiency of solar energy utilization in three double-cropping agro-ecosystems in Japan
H. Koizumi, Y. Usami and M. Satoh (Ibaraki, Japan) 241
Assessment of the energetics of human labor
M. Giampietro (Rome, Italy) and D. Pimentel (Ithaca, NY, U.S.A.) 257
Use of date-fronds mat fence as a barrier for wind erosion control. 1. Effect of barrier density on sand movement stabilization
H. Murai (Shizouka, Japan), M.A. Al-Afifi, I. Haffar (Al Ain, United Arab Emirates) and S. Yoshizaki (Tokyo, Japan) 273
Response of subterranean clover in open-top chambers to chronic exposure of sulphur dioxide
S.A. Wilson and F. Murray (Murdoch, Qld., Australia) 283
Effects of mound-cultivation on concentration of nutrients in a Zambian miombo woodland soil
P. Stromgaard (Copenhagen, Denmark) 295
Field applications of *Colletotrichum orbiculare* to control *Xanthium spinosum*
B.A. Auld, M.M. Say, H.I. Ridings (Orange, N.S.W., Australia) and J. Andrews (Yanco, N.S.W., Australia) 315

Book Reviews
Pest management in field vegetables 325
Intercropping 328
Environmental ethics 332

Crop protection 334
Contemporary agriculture 336
Agroecology and sustainable agricultural systems 338
Crop protection in cereals 342

Author Index 345